

United States  
Environmental Protection Agency  
Office of Research and Development  
United States Department of the Interior  
United States Geological Survey

Technology Transfer



# Symposium on Intrinsic Bioremediation of Ground Water

Hyatt Regency Denver  
1750 Welton Street  
Denver, CO 90202

August 30-September 1, 1994

United States  
Environmental Protection Agency  
Center for Environmental Research Information  
Cincinnati, OH 45268

Official Business  
Penalty for Private Use \$300

EPA/540/F-94/507

- 2:45PM Traverse City: Distribution of the  
Avgas Spill  
*David W. Ostendorf, University of  
Massachusetts, Amherst, MA*
- 3:15PM Break
- 3:45PM Traverse City: Geochemistry and Intrinsic  
Bioremediation of BTEX Compounds  
*Barbara H. Wilson, U.S. EPA, Ada, OK*
- 4:15PM Mathematical Modeling of Intrinsic  
Bioremediation at Field Sites  
*Hanadi S. Rifai, Rice University, Houston, TX*
- 4:45PM Adjourn

**THURSDAY, SEPTEMBER 1, 1994**

**8:30AM-12:00 NOON**

- 8:30AM Biogeochemical Processes in an Aquifer  
Contaminated by Crude Oil: An Overview of  
Studies at the Bemidji, Minnesota,  
Research Site  
*Robert Eganhouse, USGS, Reston, VA*
- 9:00AM Simulation of Flow and Transport  
Processes at the Bemidji, Minnesota,  
Crude Oil Spill Site  
*Hedeff I. Essaid, USGS, Menlo Park, CA*

## **Case Studies: Intrinsic Bioremediation of Trichloroethylene and Similar Compounds**

- 9:30AM An Overview of Anaerobic Transformation  
of Chlorinated Solvents  
*Perry L. McCarty, Stanford University, CA*
- 10:00AM Break
- 10:30AM Physical, Chemical, and Biological  
Processes Affecting the Fate and Transport  
of Trichloroethylene in Ground Water at  
Picatinny Arsenal, New Jersey  
*Mary Martin Chapiga, USGS, West Trenton, NJ*
- 11:00AM Intrinsic Bioremediation of TCE in Ground  
Water at an NPL Site in St. Joseph,  
Michigan  
*John T. Wilson, James W. Weaver  
(presenter), and Don H. Kampbell U.S. EPA,  
Ada, OK*
- 11:30AM Closing Remarks  
*Fran V. Kremer, U.S. EPA, Cincinnati, OH*
- 12:00  
NOON Adjourn



Printed on Recycled Paper

\*U.S. Government Printing Office: 1994 — 550-067/80249

Helen Murray  
Symposium on Intrinsic Bioremediation Of Ground Water  
Eastern Research Group, Inc.  
110 Hartwell Avenue  
Lexington, MA 02173-3198

Place  
Postage  
Here



INTRODUCTION

This three-day symposium is being organized by the U.S. Environmental Protection Agency's (U.S. EPA's) Biosystems Technology Development Program and the U.S. Geological Survey (USGS), with additional sponsorship from the U.S. Air Force.

Intrinsic bioremediation, the natural degradation of substances in ground water, can reduce concentrations of some important types of contaminants. This symposium will focus on the state of the science and on regulatory issues associated with application of the technology. The symposium will also provide an opportunity for people interested in intrinsic bioremediation as a ground water treatment option to exchange information and views.

PURPOSE

Presentations will concentrate on identifying the primary controls on intrinsic bioremediation and the regulatory issues for use of intrinsic bioremediation. Case studies of actual sites where intrinsic bioremediation has been applied will be presented. Posters will be on display throughout the symposium describing these case studies and providing data that demonstrates the removal of hydrocarbons.

AUDIENCE

The symposium will be attended by the regulatory and regulated communities and by scientists involved in all aspects of intrinsic bioremediation, including representatives of state and federal agencies and industry, academia, and contractors.

SYMPOSIUM ORGANIZERS

Fran V. Kremer, U.S. EPA, Cincinnati, OH  
John T. Wilson, U.S. EPA, Ada, OK  
Gail E. Mallard, USGS, Reston, VA

SYMPOSIUM REGISTRATION

There is no registration fee to attend the symposium. Space is available on a first-come, first-served basis. We encourage you to register early by completing the attached registration form and mailing it to the address printed on the back or by faxing the registration form to 617-674-2906. If you mail the form, you may attach a business card.

Within two weeks of submitting the registration form, you will receive a confirmation package, which will include a preliminary agenda and logistical information. If you have questions regarding the registration process, please call 617-674-7374. For questions regarding the symposium, please call Helen Murray at 617-674-7307.

HOTEL INFORMATION

A block of rooms is being held at the Hyatt Regency Denver until **August 5, 1994**. After that date, reservations will be accepted on a space- and rate-available basis only. Please make your reservations directly with the hotel. Reference **EPA's Intrinsic Symposium** to receive the special group rates of \$68.87/single or \$88.87/double occupancy, plus 11.8% tax. To ensure obtaining a room at the group rates, make your

room reservations now by calling the hotel using the phone numbers listed below.

SYMPOSIUM LOCATION

Hyatt Regency Denver, 1750 Welton Street,  
Denver, CO 90202  
Tel: 800-233-1234 (to make reservations)  
Tel: 303-295-1234 (to call the hotel directly)  
Fax: 303-292-2472

AGENDA

TUESDAY, AUGUST 30, 1994  
8:00AM-5:00PM

8:00AM Welcome and Overview  
8:30AM Overview of Investigations Related to Intrinsic Bioremediation  
USGS Research  
*Gail E. Mallard, USGS, Reston, VA*  
U.S. EPA Research  
*Fran V. Kremer, Office of Research and Development, U.S. EPA, Cincinnati, OH*

Overview of Processes and Procedures

9:10AM Site Characterization: What Should We Measure, Where, and How?  
*Michael J. Barcelona, University of Michigan, Ann Arbor, MI*  
9:40AM Processes Controlling the Distribution of Oil, Air, and Water  
*John L. Wilson, New Mexico Institute of Mining and Technology, Socorro, NM*  
10:10AM Break  
10:40AM New Tools to Locate and Characterize Oil Spills in Aquifers  
*Bruce J. Nielsen, U.S. Air Force (USAF), Tyndall AFB, FL*  
11:10AM Geochemical and Microbiological Degradation Processes  
*E. Michael Godsy, USGS, Menlo Park, CA*  
11:40AM Field and Laboratory Results: Getting the Whole Picture  
*Mary Jo Baedeker, USGS, Reston, VA*  
12:10PM Lunch

Regulatory Perspective On Intrinsic Bioremediation

1:30PM Department of Defense Facilities  
*Gary Vest, U.S. Department of Defense, Arlington, VA*  
2:00PM U.S. EPA Perspective  
*Walter Kovalick, U.S. EPA, Washington, DC*  
2:30PM State Perspective  
*John Shauver, Michigan Department of Natural Resources, Lansing, MI*

3:00PM Break  
3:30PM Panel Discussion on Regulatory Issues  
5:00PM Adjourn

5:30PM-7:30PM POSTER SESSION AND CASH BAR

WEDNESDAY, AUGUST 31, 1994  
9:00AM-4:45PM

Case Studies: Public Service's Site

9:00AM Overview  
*John T. Wilson, U.S. EPA, Ada, OK*  
9:15AM Monitoring Hydrocarbon Spills in Aquifers: What Does Monitoring Well Data Mean?  
*Rick L. Johnson, Oregon Graduate Institute, Beaverton, OR*  
9:45AM Bioremediation at the Seventh Avenue Site in Denver: What We Did  
*Christopher H. Nelson, Groundwater Technology, Inc., Englewood, CO*  
10:15AM Break  
10:45AM The Role of Intrinsic Bioremediation in Closure of Sites After Cleanup Through In Situ Bioremediation: The Regulator's Perspective  
*Lisa C. Weers and Mark E. Walker, Colorado Department of Health, Denver, CO*  
11:15AM The Role of Intrinsic Bioremediation in Closure of Sites After Cleanup Through In Situ Bioremediation: The Client's Perspective  
*Harry E. Moseley, Public Service Company of Colorado, Denver, CO*  
11:45AM The Role of Intrinsic Bioremediation in Closure of Sites After Cleanup Through In Situ Bioremediation: The Role of Mathematical Models  
*Tissa H. Illangasekare, University of Colorado, Boulder, CO*  
12:15PM Lunch

Case Studies: Sites Where Intrinsic Bioremediation Has Been Documented

1:45PM Intrinsic Bioremediation of JP-4 Jet Fuel  
*John T. Wilson, U.S. EPA, Ada, OK*  
2:15PM Controlled Field Studies: Fuel Components MADE-2, Natural Attenuation in a Heterogeneous Aquifer  
*Thomas B. Stauffer, U.S. Air Force, Tyndall AFB, FL*

(continued on back page)

REGISTRATION FORM  
SYMPOSIUM ON INTRINSIC  
BIOREMEDIATION OF GROUND WATER

Hyatt Regency Denver, Denver, CO, August 30-September 1, 1994

Please print clearly or attach a business card if mailing in an envelope.

Affiliation:

- ☐ U.S. Environmental Protection Agency  
☐ U.S. Geological Survey  
☐ U.S. Air Force  
☐ Other Federal Agency  
☐ State EPA  
☐ Local Government  
☐ Academia  
☐ Industry  
☐ Contractor  
☐ Consultant  
☐ Vendor  
☐ Other \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

POSTER SESSION AND CASH BAR

A formal poster session and cash bar will be held the first evening of the symposium to present the posters. There is no fee to attend this reception, but to provide the hotel with an accurate count, we would appreciate it if you would indicate whether you will be attending.

- ☐ I will attend the poster session and cash bar on August 30, 1994.  
☐ I will not attend the poster session cash bar on August 30, 1994.

Mail or fax registration to:

Helen Murray  
Eastern Research Group, Inc.  
110 Hartwell Avenue  
Lexington, MA 02173-3198  
617-674-7307  
Fax: 617-674-2906